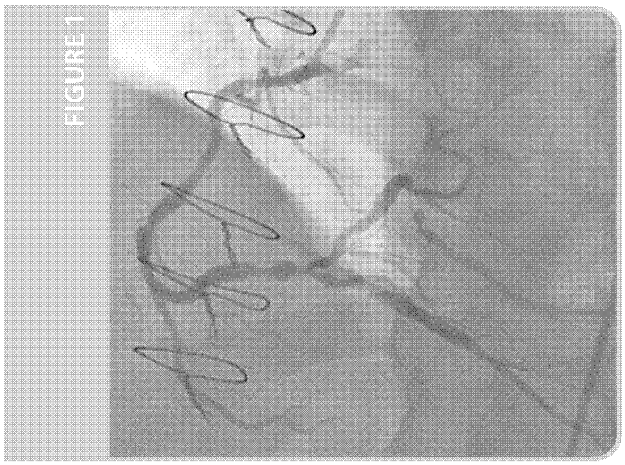
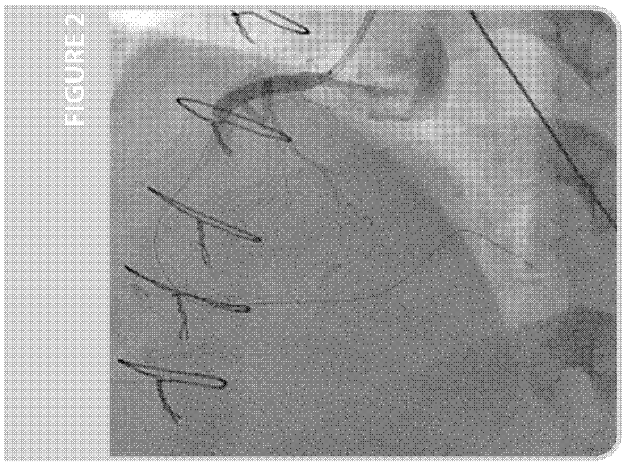
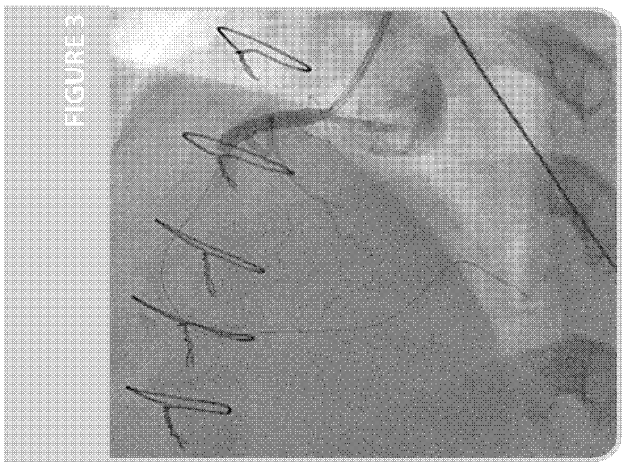
GuideLiner Catheter Used for Proximal to Distal Stent Technique







PHYSICIAN

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PRESENTATION

A patient was admitted to the hospital with refractory Canadian Class IV angina. He had undergone a previous five vessel CABG in 1997 and was studied by angiography six months earlier. On his previous study, he had native three vessel coronary artery disease. His LIMA to LAD, SVG to diagonal, and SVG to PDA were patent. His posterior and lateral walls were vulnerable to ischemia due to his occluded sequential SVG to the OM and posterolateral branches. He was treated with medical management but continued to have life limiting angina despite his maximum antianginal therapy. His angina continued to crescendo until his day of admission. In the week prior to his admission, he had taken up to twenty sublingual nitroglycerin tablets.

INITIAL FINDINGS

Coronary and graft angiography performed during the most recent admission was without change from the previous study. The patient had clearly failed medical therapy. The source of his ischemia was the posterolateral wall due to limited native flow from the RCA and limited retrograde filling from the SVG to the PDA. Angiography suggested that he would benefit from revascularization of the posterolateral branch of the RCA.

TREATMENT

The diagnostic angiogram of the RCA demonstrated a technically challenging PCI due to the numerous acute bends within the RCA, including the greater than 90° angle from the distal RCA to the posterolateral branch, and the severe diffuse disease within the entire RCA (Figure 1). Even the initial guide selection was a challenge due to the significant lesion in the ostial and proximal RCA. As a result, a 6F JR4 guide was chosen to cannulate the RCA to allow for the necessary guide manipulations. A 300cm ChoICE® PT guidewire was advanced into the distal PLA. The lesion in the distal RCA/proximal PLA was predilated (with great difficulty) with a 1.5 x 20mm OTW balloon (Figure 2). The first challenge in the case came from the deep seating of the guide catheter to provide the support for advancing the OTW balloon catheter across the chronically occluded distal RCA/proximal PLA branch.

With the necessary deep seating of the guide there was ulceration of the proximal RCA and acute vessel occlusion (Figure 3). To resolve this, the proximal RCA was stented.

(continued on back)

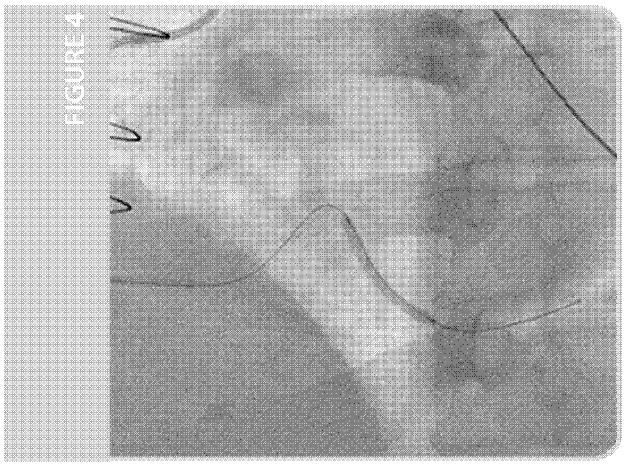
FIGURE 4

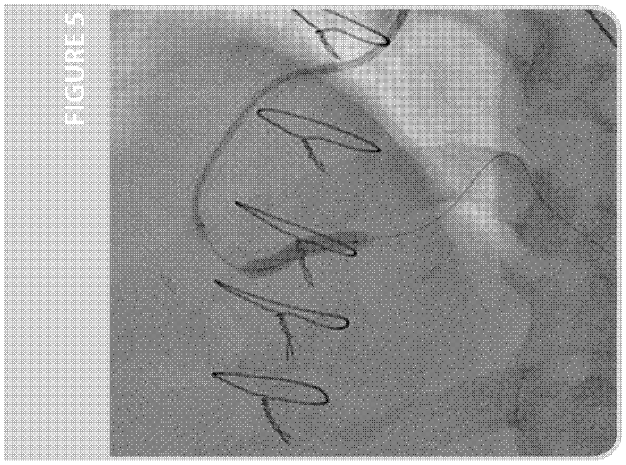
FIGURE 5

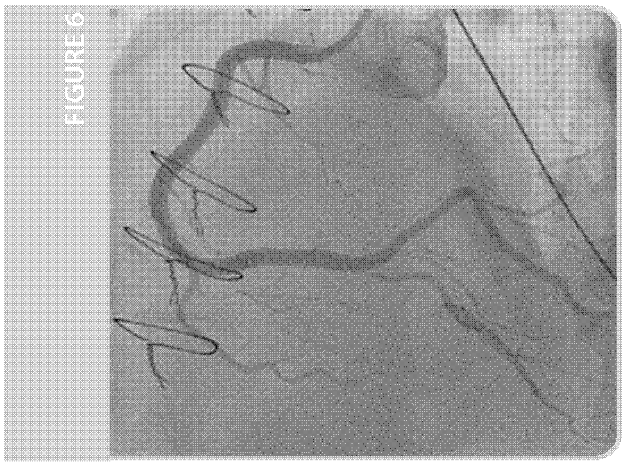
FIGURE 6

TREATMENT (CONTINUED)

The fact that there were freshly laid stent struts in the proximal RCA of this tortuous vessel would have prevented delivery of the distal stents, especially within a 6 French system. Therefore, the GuideLiner was advanced past the freshly laid stent struts into the distal RCA. Then, using the GuideLiner and the guidewire as a "rail", the JR4 guide catheter was advanced into the mid RCA to provide greater backup for delivery of the distal coronary stent past the numerous acute angles. The GuideLiner was the pivotal tool needed to achieve the necessary backup and delivery of the distal stents into proximal and mid PLA. Following these manipulations and maneuvers, a 2.5 x 28mm PROMUS® drug-eluting stent was easily delivered to the proximal to mid PLA (Figure 4). A subsequent DES was delivered proximally through the GuideLiner. Once the stent was positioned, the GuideLiner was pulled back to "unsheath" the stent at the site of the lesion (Figure 5). GuideLiner was the pivotal tool to achieve the successful percutaneous revascularization of this technically difficult vessel (Figure 6).

CONCLUSION AND POST PROCEDURE

Upon the three month follow up visit, the patient's angina significantly improved so much so that the patient has resumed exercising on his treadmill and has just built a garage for his home. The GuideLiner catheter provided the necessary support to stay within a 6F guide system and successfully revascularize a highly tortuous, chronically occluded, distal RCA. First, the GuideLiner catheter provided the necessary "rail" to successfully deep seat a guide catheter into the mid segment of the highly tortuous RCA. The GuideLiner catheter then provided the support necessary to deliver a "long" stent across a greater than 90° bend, in the distal segment of a tortuous vessel. In summary, the GuideLiner is a novel tool to support stent delivery, which may be used to facilitate proximal to distal deployment or to "unsheath" a stent within a coronary lesion rather than pushing the exposed stent across the lesion.

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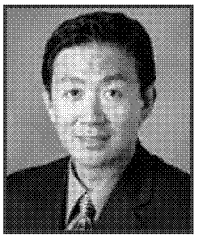

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